

THE *ASCARIS* OF CATTLE

BY

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In January, 1921, I received from Major W. P. Beal, Principal Veterinary Officer, Gold Coast, some specimens of *Ascaris*, obtained at Kumasi from a calf, which differed in certain important points from *A. vitulorum* as described by Ransom (1911). In a recent paper entitled 'On *Ascaris vitulorum*, Goeze,' Boulenger (1922) has given an excellent description of the *Ascaris* of cattle based on materials from the Punjab and from Northern Rhodesia, and has pointed out that it fails to agree with the specific diagnosis generally accepted in two most important characters, the worms examined by him possessing cephalic papillae on the lips and post-anal papillae on the tail of the male. As these were also the chief differences noted in the worms collected at Kumasi, I have re-examined my material and have compared it with the description given by Boulenger. The worms were found to be similar in most respects, but certain differences were noted and are briefly described here.

Six males and six females were examined. The length of the males was 10 to 11 cm., and of the females 15.5 to 23 cm. Cuticle with transverse striations, about 60μ to 90μ apart in the middle of the body. Head as described by Boulenger, but smaller, as the worms were smaller. Dentigerous ridges well developed, the teeth about 7μ apart. Oesophagus as described by Boulenger.

Male. Posterior extremity as described by Boulenger. But pre-anal papillae about thirty to forty in a row on each side, the more anterior ones being smaller and more widely spaced than those nearer to the cloaca. Large double post-anal papillae, as described by Boulenger, immediately behind the cloaca. Mucronate appendix with two pairs of papillae on its ventral aspect and two pairs on its dorsal aspect in a similar position, but slightly more lateral, Spicules sub-equal, as shown in fig. 2, and much as described by Boulenger; length about 0.9 mm.

Female. Posterior extremity as described by Boulenger. Tail short, conical; the distance from the anus to the tip of the tail about 0.7 mm. Vulva situated about 25 mm. from the anterior extremity in a worm about 16.5 cm. long. Vagina composed of two portions which merge gradually; the first portion about 12 mm. long, and narrow, diameter about 0.3 mm., and the second about 10 mm. long, broad, and dividing at its distal end so as to form the two uteri.



FIG. 1. *Ascaris* of Cattle. Head, anterior view, $\times 75$. *d.l.*—dorsal lip; *p.*—papilla
d.—dentigerous ridge.

The uteri run posteriorly, parallel, gradually narrowing and eventually merging with the oviducts. There was no ampulla on the oviducts near their junctions with the uteri. Eggs from the vagina about 0.08 mm. long by 0.06 mm. wide.

The worms, therefore, differ most notably from those described by Boulenger in the number of the papillae on the posterior extremity of the male, and as it is most unlikely that so careful and experienced a worker as Boulenger should have overlooked any of these, it would appear that there are at least two species of *Ascaris* found in cattle in Africa. Further study will be necessary to settle the question whether either of these is identical with the European form.

It may be noted finally that this parasite is the cause of serious disease in the Gold Coast as in Northern Rhodesia. The calf from

which the specimens were obtained died from obstruction of the bowel, and after death, Major Beal found the worms 'in thousands, all intertwined, in the small and large bowels.' The calf was only three weeks old at the time of its death, a fact which is of some interest in view of the possibility of pre-natal infection.

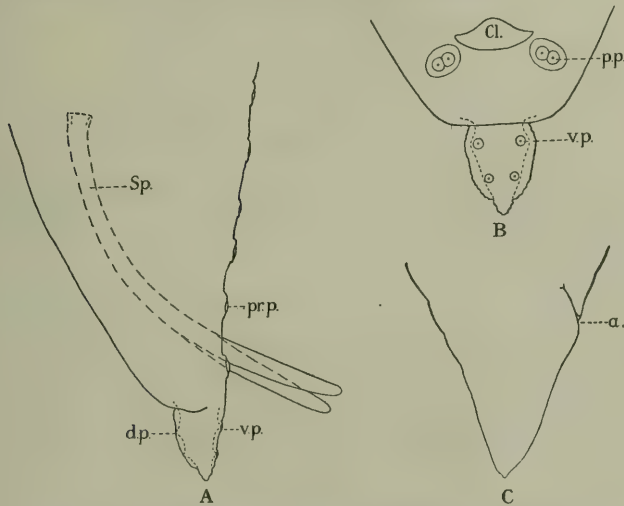


FIG. 2. *Ascaris* of Cattle. (A) Posterior extremity of male, lateral view, $\times 75$. (B) Posterior extremity of male, ventral view, $\times 95$. (C) Posterior extremity of female, lateral view, $\times 40$. *a.*—anus of female; *cl.* cloaca of male; *d.p.* and *v.p.*—dorsal and ventral papillae on appendix; *p.p.*—post-anal papilla; *pr.p.*—pre-anal papilla; *sp.*—spicule of male.

REFERENCES

- BOULENGER, C. L. (1922). On *Ascaris vitulorum*, Goeze. *Parasitology*, XIV, pp. 87-92.
- RANSOM, B. H. (1911). The Nematodes parasitic in the Alimentary Tract of Cattle, Sheep, and other Ruminants. *U.S. Dept. Agr., Bur. Animal Ind., Bull.* 127, p. 25.